

U. S. Army Corps of Engineers
Inland Marine Transportation System
Improvement Report

Appendix IV

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Contents

This is Appendix IV to the Improvement Report.

Topic	Page
Part A - OMB Criteria	1
Part B - Hyperlink to Engineer Circular (EC) 11-2-193 and Appendix V – Navigation (draft)	2

PART A - OMB CRITERIA

Performance Assessment Rating Tool (PART) Navigation Program Performance Measures Inland Navigation

Programmatic Measures

O&M OUTPUT: Segment availability. Number of instances where mechanical driven failure or shoaling results in the closure of all or part of a high or moderate commercial use segment for over 24 hours. Also closures in excess of 1 week.

(We would only include failures on the main chamber of a lock, rather than an auxiliary chamber, and shoaling due to inadequate dredging, rather than low water levels from droughts, or channels closed due to floods.)

O&M OUTPUT: Percent of high commercial use segments with sufficient preventative maintenance to achieve a good service level.

(High use segments are Colombia, Snake, the upper and lower Mississippi, the Illinois, Ohio and Tennessee Rivers and the GIWW. Pursuing initial small set of the 27 inland waterway segments, similar to the coastal nav projects with over 10M tons of cargo annually. Discussions with stakeholders will determine 'good' level of service. However 'good' is higher than 'acceptable'.)

O&M EFFICIENCY: Total O&M funds expended per segment ton-mile averaged over a five-year period, including rehabilitations.

Construction OUTPUT: % of funding to construct and expand projects that is allocated to high return investments.

(For example BCR greater than 3. This measure would exclude funding for rehabilitations.)

Internal tracking measure

O&M OUTPUT: Percent of nav asset inventory with recent structural and operational risk assessments. Assessment frequency would vary based on assessed condition of structure and level of commercial use. For example, some assets may require annual assessment while those in good condition could go multiple years between assessments. Structural assessment is the EN Dam Safety analysis; operational assessment is of the nav lock components. Also, we would track the number of assessments that reveal a significant level of risk.

PART B – EC 11-2-193 - Navigation

This part augments Section IV, paragraph 2.0 of the Improvement Report.

The EC 11-2-193, Program Development Guidance, 12 May 08 hyperlink requiring CAC access permission follows:

<https://corpsinfo.usace.army.mil/cw/ec/fy10ec/final/fy10ecfinal.htm>

The pages that follow are an extract of Appendix V from the draft EC and follow the numbering convention in the EC.

DRAFT
APPENDIX IV
NAVIGATION
TABLE OF CONTENTS

Subject	Page
Background.....	IV-1
Purpose.....	IV-1
Civil Works Program Objectives	IV-1
Navigation Performance Measures	IV-2
Budget Screening Criteria.....	IV-4
Rating and Ranking Criteria for PY Budget Development	IV-5
Increments.....	IV-6
Performance Based Budget Increment(s)	IV-11
Risk Assessment of Navigation Assets.....	IV-11
Special Considerations or Special Rating Criteria.....	IV-26
Five Year Development Plans	IV-27
Definitions.....	IV-28
Low-Use Navigation Projects.....	IV-29
Joint Costs.....	IV-30
Navigation Criteria Matrix.....	IV-31

TABLES/FILES	Table	Page
Navigation Objectives and Performance Measures	IV-1	IV-1
Navigation Budget Performance Measures	IV-2	IV-4

Navigation Relative Risk Ranking Matrix.....	IV-3.....	IV-13
Component/Activity Hierarchy.....	IV-4.....	IV-14
Inland Navigation Probability/Condition.....	IV-5.....	IV-16
Inland Navigation Consequence/Economic Impact.....	IV-6.....	IV-16
Navigation Channels and Harbors Probability/Condition	IV-7.....	IV-18
Navigation Channels and Harbors Consequence/Economic Impact	IV-8.....	IV-18
Navigation Structures Probability/Condition.....	IV-9.....	IV-21
Navigation Structures Consequence/Economic Impact.....	IV-10.....	IV-22
Bridges Probability/Condition	IV-11.....	IV-23
Bridges Consequence/Economic Impact	IV-12.....	IV-25

Shallow-Draft Harbors/Low-Use Segment Screens and Indicators.....	IV-13	IV-29
Navigation Budget Ranking Criteria - Submission Matrix.....	File	IV-39

FIGURES

Figure

Page

Channel Availability	IV-1	IV-20
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APPENDIX V NAVIGATION

IV-1. Background. The Corps has had the navigation mission since 1824. Today we plan, design, operate and maintain projects that support 2.47 billion tons of commerce annually. Many of the projects provide other outputs such as flood damage reduction, hydropower, water supply, ecosystem restoration and recreation. The Corps operates and maintains 926 navigation projects ranging from shallow-draft harbors, inland navigation systems with 240 locks at 195 sites, to major deep-draft ports.

IV-2. Purpose. The Corps' Navigation goal is to provide safe, reliable, efficient, effective and environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and recreation. The purpose of this effort is to develop a risk informed, performance based budget for carrying out the Navigation mission.

IV-3. Civil Works Program Objectives. Table IV-1 displays the Navigation Program objectives and Performance Measures published in the March 2004 Civil Works Strategic Plan. The CW Strategic Plan was developed with an explicit assumption of an unconstrained resource environment to encourage an unconstrained assessment of the nation's water resources needs and potential Corps response. Preparation of the Program Year (PY) for FY 2010 Budget Request requires the recognition of a constrained budget environment and the ongoing effort to evolve better budget linked performance measures. Table IV-2 displays the program objectives, performance measures and/or performance ranking and rating criteria which support and/or supplement Table IV-1 program objectives and performance measures to reflect the near term realities of a constrained PY budget environment.

TABLE IV-1	
Navigation Objectives and Performance Measures	
Program Objectives	Performance Measures
Obj.1: Invest in navigation infrastructure when the benefits exceed the costs.	<ul style="list-style-type: none"> - BCR (project specific measure) - Annual net benefits
Obj. 2: Support sustainable regional, basin-wide, or watershed planning and activities in partnership with others.	<ul style="list-style-type: none"> - Percent of projects recommended in Chief's reports that apply watershed principles
Obj. 3: Enhance Life-Cycle Infrastructure Management. Improve the reliability of water resources infrastructure using a risk informed asset management strategy.	<ul style="list-style-type: none"> - Percent of navigation asset inventory with recent structural/operational risk assessments, including SPRA

	<p>assessments.</p> <ul style="list-style-type: none"> - Percent of navigation asset inventory risk assessments that reveal a significant level of risk (including DSAC Class I, II and III projects). - Number of funded actions underway that address assets where there is a significant level of risk.
Obj. 4: Operate and manage the navigation infrastructure so as to maintain justified levels of service in terms of the availability to commercial traffic of high-use navigation infrastructure (waterways, harbors, channels).	<ul style="list-style-type: none"> - Risk and Reliability: Facility Condition Assessment and Impacts

IV-4. Navigation Performance Measures.

a. Competition for Federal funds is very keen and getting tighter each year. In recent years, we have had to make very hard choices in distributing scarce Federal dollars. In a constrained funding environment, we must prioritize the many worthwhile investment opportunities and ongoing maintenance needs across the entire spectrum of projects. This means that we have to concentrate available resources on the highest priority projects in terms of reducing risk and providing optimal reliability to maximize benefits. In the Navigation program, we are directing funds primarily to those harbors and waterway systems and segments that provide the highest return from commercial navigation. The Corps' Navigation program is well established and valued, however our ability to continue to provide safe, efficient, and reliable navigation to our ports, waterways and harbors to meet the needs of current and future generations is dependent upon adequate investments. Such investments provide the necessary investigations of problems, development of solutions, timely implementation of authorized projects, reliable operation and availability of our infrastructure, preventative maintenance, facility modernization or improvement, and adequate data management information systems, which are all directed at increasing operational capabilities and efficiencies. The purpose of this budget guidance is to ensure the development of convincing rationale and justification of the budget request.

b. Accordingly, a nationwide perspective must be maintained to assure that available funding provides the greatest public benefit for the investment. The safety, security, and reliability of our existing, high performing infrastructure must be maintained; new investigations to assure high yield navigation investments are advanced;

and projects that are under construction must be brought on line quickly so that benefits may be achieved as soon as possible. Coastal ports and harbors and inland navigation have been and continue to be significant contributors to the national and international movement of bulk commodities. A cursory review of the Corps' navigation assets reveals that on a nationwide basis: Over half of all inland navigation projects have or will soon exceed their original 50-year design life; our top 59 coastal ports have full project depth only 30 – 35 percent of the time, and only for one half of the channel width; a substantial portion of the bridge inventory is approaching or has exceeded its design life; and our coastal jetties and breakwaters are deteriorating. In response, the Corps must pursue an on-going program to rehabilitate, modify, or replace structures and components, and maintain channels exhibiting a deteriorating ability to meet system demands.

c. To achieve the Navigation objectives in Table IV-1, the following budget strategies and performance measures are established for the PY budget development. Each of the budget strategies and measures are designed to demonstrate that each budget item makes sense and contributes to the Navigation goals and supporting objectives.

TABLE IV-2 Navigation Budget Performance Measures	
Budget Strategy	Ranking Criteria
Keep ongoing studies or PEDs going if likely to produce recommendation for project (I) or start new phase of studies or PED (I)	Date of Agreement – executed or expected Commercial tonnage increase % reduction in delay costs Years to complete Watershed study –y/n Benefit to Cost Ratio (BCR) – PED only
Complete ongoing construction to start getting benefits of high performing navigation projects (each contract should be separate line item) (C)	BCR Other purpose outputs by BL
Initiate and complete replacements and rehabilitations (each contract should be separate line item) (C and O&M)	Inland Waterways Users Board priority Relative risk of failure BCR Years to complete
Initiate and complete dam safety assurance/seepage control/static instability correction projects (C)	Relative risk of failure – risk compared to other Corps dams (portfolio risk assessment if available in PY) Critical loss of pool and /or navigation Other purpose outputs by BL
Operations - Assure that projects perform as designed (O&M)	Cumulative benefits Cumulative O&M costs for above benefits (over set time period)
Maintenance - Make sure projects are safe to operate (managing risk) (O&M)	Navigation channel availability Lock closures exceeding 24 hours duration due to mechanical failure – scheduled and unscheduled Condition assessment and consequences/impact Cumulative benefits Cumulative O&M costs for above benefits (over set time period)
Fund adequate data collection (Remaining Items, I, C, O&M)	Consequence of inadequate data

IV-5. Budget Screening Criteria.

- a. New Start Definition – See paragraph II-2.8, of EC.

- b. New Phase Definition - See paragraph II-2.8, of EC.

IV-6. Rating and Ranking Criteria for PY Budget Development.

a. Stakeholders' Perspectives for Funding Needs and Development of Five-Year Management Plans. From the National Navigation Performance Metrics workshops and regional stakeholders' conferences, contributions from the Stakeholders and Corps leadership were derived to help frame the Navigation program performance-based budgeting concept. The key Stakeholders' themes were reliability improvements, risk reduction, linking investments to underpinning the national economy, durability of Navigation systems, Navigation systems responsiveness to International trade growth, and justified efficiency improvements in Navigation. To follow the "Citizen-centered" principle expressed in the President's Management Agenda, Stakeholders' perspectives must be considered, and the legitimate input should be incorporated into the Navigation budgetary process. Accordingly, each MSC, district, project manager or project management team will work with appropriate local/regional partners and stakeholders to develop a Five-Year Management Plan for their respective projects. The plans will incorporate performance based budgeting concepts and develop the future direction based on the current restricted funding environment. The plans should be comprehensive and address anticipated study, construction, operations and maintenance requirements.

b. In order to achieve the objectives shown in Table IV-2, we are establishing budget increments to assure uniformity across the country in building annual budgets from the same point. Budget increments reflect the eligibility criteria described in the following paragraphs. Increment 1 will receive priority consideration for budget development. These budget increments in conjunction with the objectives and ranking criteria will go a long way to making informed and wise budgetary decisions to support our program goal.

c. Systems Approach. The system relationship of each project/segment will be considered when developing the Civil Works program. A systems approach is needed to ensure that investments are integrated into a whole that preserves or enhances performance at the system level. This approach will help to implement the goals of the Strategic Plan. This approach applies most obviously to the inland waterways, but also has applications in other areas, such as regional sediment management. For instance, in the case of a major inland waterway, analytical perspectives should be developed to help determine the mix in the PY of investments in maintenance, operations improvements, replacements and rehabilitations, new construction, planning, and design that will maximize system efficiency, safety, and reliability over time. For FY 10 a list of systems has been developed. See Annex C (O&M) for the list of systems. These systems will be

cross-referenced to USGS Sub-Region Hydrologic Unit Codes (HUC) for budget presentation purposes.

IV-7. Increments

a. Increment 1 definitions. For definitions of increments for the Investigations and Construction accounts see Definition/Glossary section in the main EC.

(1) Investigations (for studies and preconstruction, engineering, and design). Remaining Items (R&D, data collection, PAS, etc.) – initial level will be established by HQ.

(2) Construction* (Includes: specifically authorized projects, replacement projects (those former major rehabilitation projects characterized as repairs to restore capability will be included in O&M for the PY), dam safety assurance/seepage control/static instability correction projects, and CAP projects.

* For increment 1 funding for Construction refer to the Definition/Glossary section of the main EC.

(3) Operation and Maintenance (O&M).

(a) Navigation Segments. Inland waterway operation and maintenance costs should be broken out by major waterway segment.

(b) The first increment will seek to provide the greatest benefit for the investment consistent with performance measures and sufficient to meet minimum legal responsibilities for operation, environmental compliance and safety. Subsequent increments will provide additional benefits as measured by the performance measures. All increments must document performance according to the appropriate Business Lines criteria. The last increment for each project is the capability level. Operations increments will be submitted separately from maintenance increments. This means that for some projects there will be an operation line item and a maintenance line item in the initial level and subsequent levels.

(c) For each MSC combined amount among all Business Lines for operation and maintenance for Increments 1 through 3, see Table C-2.2. This initial amount is for all the MSC's O&M requirements as prioritized below. Simple pro-rata allocations by district and/or project will not result in the expected performance based budget and should not be done.

(d) The philosophy is to use increment 1 as the minimum level to account for critical routine operation and maintenance activities and to use increment 2 to account for critical

non-routine activities on projects. The total of Increment 1 plus Increment 2 represents the minimal program and is limited to 75% of the amount in Table C 2.2 by MSC. The total of Increments 1, 2 and 3 represents no more than 100% of the amount in **Table C 2.2** by MSC.

(e) Additional O&M criteria. (Definition of terms will follow)

(1) Sufficient to meet minimum legal responsibilities for operation, safety and environmental compliance: examples follow

[a] Subsistence Harbors

[b] Caretaker activities

[c] Critical Harbors of Refuge

[d] Project Condition Surveys

[e] Environmental Compliance requirements

(2) Multipurpose projects when those projects are included in the minimum programs of other business lines and not a separable element

(3) Work required by treaties

(4) Removal of Aquatic Growth

(Note Surveillance of Northern Boundary Waters moved to the Flood Damage Reduction Business Line.)

b. Initial Increment 1. Only critical routine and critical cyclical activities can be included in this increment. These activities are required to minimally operated or maintain the project and may not provide a full service operation. Routine activities are those that have been conducted every year for at least the last five years, for example the operation of a powerhouse, or are required to meet legal mandates, environmental (ESA/Biological Opinion) requirements, authorized mitigation requirements, and historic preservation. Cyclical activities are those that are required on a regular basis, but not each year. An example of a cyclical routine activity would be projects where dredging is needed on a regular recurring basis, but not every year, e.g. dredging is needed only every two years. Increment must be performance based and integral with a study/project with high outputs and consistent with ranking. **What is included and what is not.**

- (1) Bare Bones Operations costs (locks): May not be full 24-hour operation.
- (2) Bare Bones routine maintenance (locks): Would not be all maintenance needs.
- (3) Critical routine minimal level of dredging at high use commercial deep draft, shallow draft and inland projects or high use segments of projects: No advanced maintenance dredging.
- (4) Routine minimal level Dredging Subsistence Harbors: Does not include point of origin harbor.
- (5) Routine minimal level Dredging Critical Harbors of Refuge: Does not include all Harbors of Refuge.
- (6) Caretaker funding for projects or segments not expected to be funded.
- (7) Critical routine maintenance of dredged material placement sites for 3 above: Does not include non-routine maintenance of dredged material placement sites.
- (8) Water/Environmental Certification for critical maintenance dredging for 3 above: Does not include all certification needs.
- (9) Bare Bones Project Condition Surveys (PCS) (include Low-Use): Does not include all anticipated PCS needs.
- (10) Critical studies for high risk coastal structures: Does not include studies of all structures.
- (11) Bare bones debris/drift removal/obstruction removal at high use ports: Does not include all anticipated removal needs.
- (12) Critical routine minimal level Removal of Aquatic Growth (RAG) for high use projects: Does not include all Removal of Aquatic Growth.
- (13) Critical minimum routine dam safety activities to ensure USACE meets fundamental safety standards. Includes inspections, data collection, surveys, drain cleaning, relief well maintenance, updating Emergency Action Plans, and Dam Safety training. Does not include all dam safety activities.
- (14) Critical inspections, studies and routine repair for high level bridges. Does not include all bridges.

c. **O&M Increment 2.** Only critical non-routine activities may be included in this increment. Critical non-routine activities are those that must be accomplished to ensure project safety, and critical maintenance actions that are required to keep the project operating and delivering benefits. Non-routine activities are actions that are “project like” in that they are a unique action with a specific beginning and end. Examples of non-routine actions would be the replacement of wire ropes or valves, or the repair of failing lock, dam, or bridge components. This increment can **include** major maintenance (MM) **and** rehabilitation (MR), as will fit, when combined with Increment 1 activities, within the overall limit of the 75% constraint. Each non-routine activity must be shown separately to allow individual funding decisions based on the performance metrics and must be shown in priority order by District and MSC Rank. Increment must be performance based and integral with a study/project with high outputs and consistent with ranking.

- (1) Critical on-going non-routine maintenance.
- (2) On-going major maintenance of high use projects or segments: could include new major maintenance.
- (3) Critical non-routine maintenance of dredged material placement sites at high use commercial deep draft, shallow-draft and inland projects or high use segments of projects.
- (4) Construction of Dredged Material Disposal Facilities (DMDFs) for high use commercial deep draft, shallow-draft and inland projects or high use segments of projects. These activities were formerly included in a Construction Remaining Item.
- (5) Critical studies to complete Dredged Material Management Plans (DMMP) for construction of dredged material placement sites for high use commercial deep draft, shallow-draft and inland projects or high use segments of projects.
- (6) On-going (studies and work) rehabilitations of high-use projects, which could include new rehabilitation projects.
- (7) Critical non-routine repair for high level bridges. Does not include all bridges.
- (8) Removal of Aquatic Growth for other high use projects.
- (9) Other Project Condition Surveys (PCS) (include Low-Use) beyond Bare Bones annual routine level.

(10) Gate replacement /rehab study on high risk, system impacts.

(11) Critical non-routine dam safety maintenance and repairs to reduce the highest risk contributors for DSAC I and II projects.

NOTE: Items for Surveillance of Northern Boundary Waters previously included in the Navigation Business Line has been moved to the Flood Damage Reduction Business Line.

d. **O&M Increment 3.** This increment includes critical operation and maintenance activities, both routine and non-routine, for the up to 25% above the minimal program level, that are defined by the state of the practice and are needed to sustain public safety and the expected future benefits of the project. This will generally include critical activities that qualified for Increments 1 or 2, but exceeded the 75% limit. This still may not represent full service levels. Preparation of reports for MM and MR can be included in this increment. MM and MR activities must have approved reports before they can be included for implementation. Each Increment 3 activity must be shown separately to allow funding decisions based on the performance metrics, and must be shown in priority order by the District and MSC Rank. Increment must be performance based and integral with a study/project with high outputs and consistent with ranking. This may include:

(1) Critical Advanced Maintenance dredging on high use projects. Does not include all advanced maintenance.

(2) Critical minimal level of dredging and operations of low-use projects that have commerce, commercial fishery, multi-agency requirements, and/or public transportation.

e. **O&M Increment 4.** This increment includes operation and maintenance activities, both routine and non-routine, above critical work in Increments 1 through 3, that are defined by the state of the practice and are needed to sustain the expected future benefits of the project. In most cases, activities in this increment will support continuing the level of service that customers, stakeholders, and others have come to expect and depend-on for sustaining public safety and economic, environmental and social benefits. Multiple Increment 4 activities should be submitted that reflect the logical pieces of routine or non-routine activities beyond the 5-year average level shown in Table C 2.2. Each Increment 4 activity must be shown separately to allow funding decisions based on the performance metrics, and must be shown in priority order by the District and MSC Rank. Increment must be performance based and integral with a study/project with high outputs and consistent with ranking.

f. **O&M Increment 5.** Activities that have a high expected return on investment that enable greater levels of performance in future years should be included in this enhanced or capability Increment. Each Increment 5 activity must be shown separately to allow funding decisions based on the performance metrics, and must be shown in priority order by the District and MSC Rank. Increment must be performance based and integral with a study/project with high outputs and consistent with ranking.

IV-8. Performance Based Budget Increment(s). Navigation will use five increments this PY. Add additional budget items for logical, needed increments that contribute to the program goals. Ranking will be based on ranking criteria shown in the spreadsheet Table IV-4 and listed below. The basis for adding increments in terms of budget request for a project will be based on the demonstrable beneficial impact on increasing average annual net benefits by accelerating project completion, or improved performance, additional outputs or increased reliability in the PY. There are three key performance measures that will be considered: (1) reduction in years to completion, (2) increase in annual net benefits, and (3) BCR for PEDs, construction, and rehabilitations.

IV-9. Risk Assessment of Navigation Assets. PY10 budget will achieve a significant milestone in USACE asset management efforts with the Navigation, Hydropower and Flood Damage Reduction business lines using a common format to address risk. Navigation assets are established under 4 groups: (1) Inland Navigation, (2) Coastal Navigation, (3) Navigation Structures including jetties, breakwaters, bank stabilization and training works and (4) Bridges. There will be five levels of Probability/Condition and five levels of Consequences/Economic Impact associated with each of the Navigation asset groups. These will be used to develop a Relative Risk Ranking Matrix shown in Table IV-3. The Relative Risk Ranking Matrix values will be applied to each budget work package.

a) A risk assessment involves identifying sources of potential conditions, assessing the likelihood or confidence level that they will occur and the consequences if it does occur. Project condition classifications for budget requests shall be developed for each project/maintenance budget item in accordance with the Tables IV-5, IV-7, IV-9, or IV-11, which ever is applicable. These classifications will provide for the initial basis for capturing the true state of the infrastructure or component thereof. In addition, these classifications provide the foundation for managing USACE infrastructure uniformly and consistently using asset management principles, systems and risk-based condition indices for operating and maintaining projects while directly embracing the Program Assessment Rating Tool initiative. It is critical that an honest, defensible assessment and evaluation of each project be made for the ranking process in order to accurately provide a snapshot of where scarce resources need to be allocated.

b) Activities, components, and projects will be evaluated for the consequences and economic impacts of failure and ranked in accordance with Tables IV-6, IV-8, IV-10, or IV-12, which ever is applicable.

c) Tables IV-5 and IV-6; Tables IV-7 and IV-8; Tables IV-9 and IV-10; and Tables IV-11 and IV-12, together form the basis of the “Relative Risk” based methodology which supports the Corps risk-based direction for making investments decisions and provide the information to populate Table IV-3, Navigation Relative Risk Ranking Matrix. The “Relative Risk Ranking” values are determined from Table IV-3 using both the “Probability/Condition” classification and the “Consequence/Economic Impact” category values established for each project or budget item. Note that more than one project/item can populate a box. Matrix values will be used is making informed and wise investments, minimizing risk and providing maximized benefits to the public. Ranking of within each box (if required) will be determined as appropriate and based on supporting justification from the MSC for projects that appear to be “out of place” in their matrix table.

TABLE IV-3 NAVIGATION RELATIVE RISK RANKING MATRIX

	Condition	Probability/Condition Classification				
		F	D	C	B	A
Consequence		Failed	Inadequate	Probably Inadequate	Probably Adequate	Adequate
Consequence/Economic Impact	I	25	24	22	19	15
	II	23	21	18	14	10
	III	20	17	13	9	6
	IV	16	12	8	5	3
	V	11	7	4	2	1

	High Relative Risk
	Med-High Relative Risk
	Medium Relative Risk
	Low Relative Risk
	Minimal Relative Risk

d) **Inland Navigation** Consists of Navigation Locks and channels that combine to determine system availability for movement of commercial goods.

i) **Navigation Lock Components.** This will be based on the FEM Hierarchy currently being developed. An example is:

Lock
 Lock Chamber
 Air System
 Gates
 Infrastructure
 Tow Haulage
 Valves

Table IV-4 Component /Activity Hierarchy

Designator	Component/Activity	Component/ Activity Rank	Critical or Non Critical
Z	Backup Electrical Power system	45	NC
Q	Buildings	20	NC
AQ	Communication/IT Equip	22	NC
AF	Compressed Air generation & distr	62	NC
P	Culvert Intakes	89	NC
AL	Dam closure hoisting machinery, crane & lifting beam	74	C
X	Dam gate controls & position indicators	77	C
AH	Dam gate Emerg closure & bulkheads	85	C
AI	Dam gate maint closures & bulkheads	30	NC
W	Dam gate oper equip	84	C
V	Dam gate struc & seals	125	C
R	Dam Piers/Walls	114	C
BF	Dewaterings	116	NC
B	Dredging	116	C

AS	Elevators	5	NC
AT	Fixed Cranes	7	NC
AE	HVAC	13	NC
AB	Hydraulic pumping & distr	116	C
AK	Lock closure hoisting machinery, crane & lifting beam	37	C
D	Lock Gates	111	C
C	Lock Wall	147	C
BC	Lock/Dam/Other Misc (Lighting, Esplanade, Railings, Drainage,etc...)	20	NC
A	Minimum Acceptable Operations Service Level	195	C
BE	Misc Ops	13	NC
AN	Mooring bits	66	NC
F	Mooring Cells	39	NC
BB	New Real Estate Outgrants/Disposals/Actions	10	NC
Y	Primary elec serv & distr	160	C
BD	Recreation Dredging	13	NC
T	Service Bridge	18	NC
AM	Service Bridge Crane	27	NC
S	Spillway & downstream dam features	67	C
AO	Tow Haulage System	65	NC
AG	US & DS Lock maint lock closures/bulkheads (7 items)	32	NC
E	Utility Cross-overs	67	NC
AJ	Valve Culvert maint closures & bulkheads	24	NC
L	Valves	101	C
AD	Water & sewage svc, treatment & distr	15	NC
BA	Waterway Safety Critical Signs	20	NC

Condition Assessment. Begins with a determination of which components are critical (potential to halt navigation) and which are non-critical (limited potential to halt navigation). Predicted component conditions be assessed by a review of multi-disciplined inspection reports, on-site reviews, rating criteria, and/or FEMS operations and maintenance records (when available).The predicted condition of the component is a critical factor in determining the risk of unscheduled closures. Output of the process is shown in Table IV-5 below.

Table IV-5 Inland Navigation Probability/Condition		
Condition Level		Probability / Condition
GOOD	A	ADEQUATE (Failure unlikely within budget cycle)
MODERATE	B	PROBABLY ADEQUATE (Less than 50% probability of failure within budget cycle)
POOR	C	PROBABLY INADEQUATE (Failure could occur within budget cycle)
FAILING	D	INADEQUATE (High probability for failure within budget cycle)
FAILED	F	FAILED (Already failed or failure will occur within budget cycle)

- ii) **Consequences of diminished Navigation feature performance** are computed for each budget line item that could result in an unscheduled closure or diminished channel depth and/or width.

Table IV-6 Inland Navigation Consequence/Economic Impact	
Consequence Level	Consequence Description
1	Maximum risk to mission Highest economic loss; Over ___ B ton miles (OR TONS?) <i>Economic level thresholds are in development.</i> Probable life safety impact Minimum Acceptable Operations Service Level (see definitions)

	Court Decree Mandated Action Shutdown of energy generation or distribution facilities for national public use with no alternative modes of transportation (e.g. power plants and oil distribution facilities)
2	High risk to mission No life safety impact High economic loss; Over 1B ton miles <i>Economic level thresholds are in development.</i> Diminished cost efficiency of energy generation or distribution facilities for national public use with higher cost alternative modes of transportation (e.g. power plants and oil distribution facilities)
3	Moderate risk to mission No life safety impact Moderate economic loss; Between 500 and 1B ton miles <i>Economic level thresholds are in development.</i>
4	Low risk to mission No life safety impact Low economic impact; Under 500M ton miles <i>Economic level thresholds are in development.</i>
5	Negligible risk to mission No life safety impact Least economic; <i>Economic level thresholds are in development.</i>

e) **Coastal Navigation** Consists of Navigation channels and the availability of the maintained depth for movement of commercial goods. The 59 coastal ports with over 10 million tons of cargo per year operated at a half width channel availability of 35% in 2006. This restriction results in tidal delays for import/exports and missed opportunities. A concentrated effort to improve the channel half-width availability will commence with a deliberate tracking program implemented to illustrate successful investment.

(1) Condition Assessment. Asset Management principles provide a uniform condition assessment of each component. The predicted condition of the component is a critical factor in determining the risk of unscheduled closures. Channel condition is determined from published hydrographic survey reports. The condition level is determined from Table IV-7 below. The percentage listed under the probability/condition listed below refers to the half channel availability that would occur without the requested funding increment.

Table IV-7 Navigation Channels and Harbors Probability/Condition		
Condition Level		Probability / Condition
GOOD	A	95% at Half Channel Availability at maintained Depth
MODERATE	B	75% at Half Channel Availability at maintained Depth
POOR	C	50% at Half Channel Availability at maintained Depth
FAILING	D	25% at Half Channel Availability at maintained Depth
FAILED	F	0% at Half Channel Availability at maintained Depth

(2) **Consequences of diminished Navigation feature performance.** These are computed for each budget line item that could result in diminished channel depth and/or width. Each consequence or economic impact listed below is independent of each other. For a work package to qualify for a particular consequence level it only has to satisfy only one of the listed consequences. For work packages that fit into more than one consequence level, choose the consequence level that most closely fits the work package. The consequence level is determined by Table IV-8 below.

Table IV-8 Navigation Channels and Harbors Consequence/Economic Impact	
Consequence Level	Consequence Description
1	Demonstrated ¹ highest Economic Loss (>10 M Tons) Imminent life safety impact Court Decree Mandated Action (to include environmental) DoD Strategic Ports Shut down of Energy Distribution Facilities with no alternate modes of transportation

2	Demonstrated ¹ high economic loss (5 - 10 M Tons) Probable life safety impact Alternate modes of transportation exist for Energy Distribution Facilities, but at a higher cost than water borne transportation
3	Demonstrated ¹ moderate economic loss (1 - 5 M Tons) Possible life safety impact
4	Low economic impact (<1M Tons) No life safety impact
5	Negligible economics (Recreation Harbors, No commercial Activity) No life safety impact.

¹Thresholds and basis for economic impact are under development. One measure of economic impact can be demonstrated using rate savings benefits, transportation cost savings, or damages avoided.

(3) Risk Matrix (follows the 5x5 matrix established above)

(4) Definitions

- (a) Channel Availability Percentage - Determined by the amount of time the channel is available/needed at maintained depths. Does not include channel availability due to tidal fluctuations.
- (b) Energy Distribution - Includes impacts to harbors which serve as principal import/export ports of coal, natural gas, and other products required to produce energy.
- (c) Half Channel availability - Channel availability between quarter points, see figure 1 below.

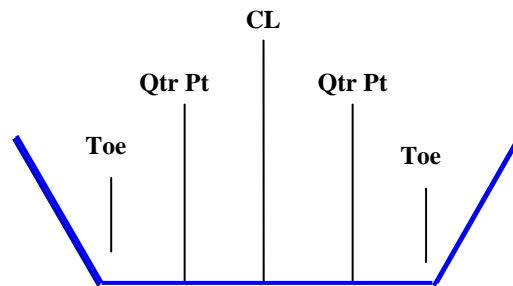


Figure 1 – Channel Availability

- (d) Harbor of Refuge - Section 175.400 of Title 46 (Shipping), Chapter I (Coast Guard) of the Code of Federal Regulations defines a Harbor of Refuge as "Harbor of safe refuge means a port, inlet or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor."
- (e) Life Safety Impacts - Includes impacts to subsistence harbors and critical harbors of refuge. Coastal inlets?
- (f) Subsistence Harbor - Communities dependent for survival on harbors that provide principal means of receiving essential goods and services for which alternative means of delivery are not practical. Life Safety Impacts - Includes impacts to subsistence harbors and harbors of refuge.
- f) **Structures**
- (1) **Components:** This will be based on the FEM Hierarchy currently being developed,
- (2) **Condition Assessment:** Asset Management principles provide a uniform condition assessment of each component. The predicted component condition is a critical factor in determining the risk of bridge closures.

Table IV-9 Navigation Structures Probability/Condition		
Condition Level		Probability / Condition
GOOD	A	Failure to the point navigation will be measurably impacted is unlikely within budget cycle Project fully accomplishing its intended purpose
MODERATE	B	Low risk of failure to the point navigation will be measurably impacted within budget cycle
POOR	C	Medium risk of failure to the point navigation will be measurably impacted within budget cycle
FAILING	D	High risk of failure to the point navigation will be measurably impacted within budget cycle
FAILED	F	Condition severely restricts or halts navigation within budget cycle

(3) Consequences of diminished Structure performance are computed for each structure or major component.

Table IV-10 Navigation Structures Consequence/Economic Impact	
Consequence Level	Consequence Description
1	Demonstrate highest economic impact ¹ Imminent life safety impact Critical to safe navigation by commercial vessels at High Use Navigation Project (>10M tons) Critical to safe navigation at DoD Strategic Ports
2	Demonstrate High economic impact ¹ Probable life safety impact. Probable impacts to subsistence harbors/harbors of refuge. High economic loss (5 - 10 M Tons) Probable life safety impact Alternate modes of transportation exist for Energy Distribution Facilities, but at a higher cost than water borne transportation
3	Demonstrated Moderate economic impact ¹ Possible life safety impact. Possible impacts to subsistence harbors/harbors of refuge. Moderate economic loss (1 - 5 M Tons) Possible life safety impact
4	Low economic impact ¹ and no life safety impact. Little impacts to subsistence harbors/harbors of refuge. Low economic impact (<1M Tons) No life safety impact
5	Negligible economic and no life safety impact. No impacts to subsistence harbors/harbors of refuge. Negligible economics (Recreation Harbors, No commercial Activity) No life safety impact.

¹Thresholds and basis for economic impact are under development. One measure of economic impact can be demonstrated using rate savings benefit, transportation cost savings, or damages avoided.

- (4) **Risk Matrix** (follows the 5x5 matrix established above)
- (5) **Definitions**

g) Bridges. A substantial portion of the Corps bridge inventory is approaching or has exceeded its design life.

(1) Components: This will be based on the FEM Hierarchy currently being developed, using info from CEBIS, the USACE bridge database and input from the Districts. An example is:

Bridge
 Decks
 Superstructure
 Substructure
 Infrastructure
 Channel Culverts
 Scour Ratings

(2) Condition Assessment: Asset Management principles provide a uniform condition assessment of each component. The predicted component condition is a critical factor in determining the risk of bridge closures. Bridge condition is determined from data in the Corps of Engineers Bridge Information System (CEBIS).

Table IV-11 Bridges Probability/Condition		
Condition Level		Probability / Condition
GOOD	A	Fully operational at design loading and capacity Bridge Condition Rating greater than 80 pts
MODERATE	B	Bridge Condition Rating greater than 65 pts
POOR	C	Operational at reduced capacity or load Bridge Condition Rating greater than 50 pts
FAILING	D	Bridge is posted for load restrictions Bridge Condition Rating greater than 35 pts

FAILED	F	Not operational Bridge Condition Rating less than 35 pts
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(3) Consequences of diminished Bridge performance are computed for each bridge (or major component).

Table IV-12 Bridges Consequence/Economic Impact	
Consequence Level	Consequence Description
1	Potential for loss of life on: High Use Bridges Lifeline Bridges Important Bridges Results in USACE mission failure Life Safety Concern – Potential for loss of life should the member(s) fail or not function as intended Economic Impact (?)
2	Probable life safety impact on Bridges with ADT between 2500-5000 Ability to carry traffic to maintain the required use of the route and serve the Nation's needs (commerce, defense, lifeline). Significant impact to the ability to conduct USACE missions
3	Possible life safety impact on Bridges with ADT between 1000-2500 public access bridge Minimal life safety impact Moderate impact to the ability to conduct USACE missions
4	Possible life safety impact on Bridges with ADT between 0-1000 No life safety impact Minimal impact to the ability to conduct USACE missions
5	Routine maintenance that extends the life of the bridge. Repairs that delay replacement Negligible economic impact No life safety impact.

(4) Risk Matrix (follows the 5x5 matrix established above)

(5) Definitions

- (a) Bridge Use, Average Daily Traffic (ADT); Bridges with ADT>5000 vehicles will be considered high use. Bridges will be ranked in descending order of ADT.

- (b) Lifeline Bridges; Lifeline bridges will be considered high risk. In lieu of more definitive data, bridges with detour lengths greater than 10 miles will be considered lifeline routes.
- (c) Important Bridges; Bridges with multiple importance (commerce, national defense, and impacts to navigation) will be considered high risk with higher ranking given to those bridges with a greater number of importance factors.

NOTE: BRIDGE CONDITION ASSESSMENT TRIAGE: a qualitative assessment will be made to identify those conditions where an in-depth analysis may yield favorable results, either in reduced scope and cost of repair and/or delay in repairs. Identify conditions where in-depth analysis will likely be of benefit; e.g., the analysis shows that the members are adequate for the given conditions and that repairs can be delayed, reduced, or eliminated. The costs of the analysis should be offset by reduction or elimination of repair costs.

IV-10. Special Consideration or Special Rating Criteria

- (1). Funding for minimum fleet dredges follows the dredge. If the requirements for the minimum fleet dredge do not materialize, the funds programmed for the dredge will be reprogrammed to other minimum fleet dredging requirements.
- (2) Replacement and Rehabilitation Construction will be included as unique line items, not hidden under the parent project. For example, the rehabilitation items for Markland Locks and Dam will not be included in the Ohio River project maintenance items. These items migrated to O&M from Construction in the FY 07 cycle and need to remain identifiable. Rehabilitations are characterized as repairs to restore capability and are to be included in O&M.
- (3) Rehabilitation or replacement studies will be included as unique line items, not hidden in a general Operation line item for the parent project, marked with the appropriate Phase code.
- (4) Dredged Material Disposal Facilities (DMDFs) will be included as unique line items, with the appropriate Phase and Category/Class/Subclass (CCS) codes. These items migrated to O&M from Construction in the FY 07 cycle and need to remain identifiable.

(5) Projects Previously Budgeted in Ecosystem Restoration Construction Account. Special projects in part or in whole previously budgeted in the Ecosystem Restoration Business Line for Construction were moved to O&M in FY 2007. Beginning in the PY, these projects will ultimately be budgeted in the O&M account of the business line of the original project (navigation, flood and coastal storm damage reduction, hydropower) following the instructions in Appendices III, IV, and V. However, initially these projects and features will be entered in the environment business line, following the rules for ecosystem restoration construction. Use the O&M appropriation code and CCS, the ENR Business line code and a funding level/increment code of 7 (for information only) – need ENR help with these increments as Nav only proposes to use Increments 1-4. It is in Construction in ENV as Increment 7s, then moves to Nav O&M, in various Increments depending on ENV input.

(6) For projects responding to mandatory BiOp requirements:

Increment 7 is the amount required to maintain minimum progress on BiOp and avoid jeopardy and limited to 75% of the FY 2008 President's Budget;

Increment 7.1 is the remaining amount above the 75% limit required to maintain planned progress on BiOp and avoid jeopardy;

Increment 7.2 is the capability increment for priority items required by the BiOp.

For projects not in response to mandatory BiOp requirements, follow rules for Construction.

IV-11. Five Year Development Plans.

a. Each year the navigation asset condition assessments will be reviewed and updated to reflect work accomplished and changes to condition and therefore priority. For inland river systems a prioritized maintenance list will be developed. Based on funding assumptions such as if only Increments 1 and 2 are funded, Districts, MSC's and HQ will be able to establish O&M program glide paths. Similar process will be developed for the coastal ports and harbors and will be better defined when channel condition assessment criteria are finalized for use in the FY10 budget development process. Setting long-term performance targets to be provided.

b. End State Performance target: For all navigation channels the goal is to attain and maintain channel availability at the justified level of service for the target years. For Inland navigation the goal is to halt the trend of increasing navigation lock outages and maintain lock availability at the FY01-02 baseline level on a national basis.

c. Ongoing Construction funded efforts will be a consideration in overall funding, however a similar backlog of work in this program is anticipated beyond the FY12 5-year horizon.

IV-12. Definitions. The following definitions refer to the O&M criteria.

a. High-Use Projects – those deep- and shallow-draft navigation projects with one million tons or greater, and those waterways with both one million tons or greater and one billion system ton-miles or greater.

b. Project Condition Surveys (PCS) – those hydrographic surveys needed to determine the program year conditions of projects in caretaker status or that are not funded separately. This work does not include testing, sampling or any other activity that should be included in a specific project funded budget package. The PCS items will be by state and will indicate the total number of projects that could be surveyed and the number of projects that will be performed as part of the line item. All PCS will not be included in a single line item.

c. Water/Environmental Certification – those activities needed to acquire certification in the PY to allow dredging to proceed that are not funded separately. This work does not include any activity that should be included in a specific project funded budget package. The Certification items will be by state and will indicate the total number of projects that could be certified and the number of certifications that will be performed as part of the line item. This will be handled like the PCS line items. All Certifications will not be included in a single line item.

d. Subsistence Harbors – those harbors that are dependent upon the navigation project as their principal means of receiving goods and services, and for which alternative means of delivery are not practicable. An example would be Tangier Island off the coast of Virginia or the Channel Islands off the California coast.

e. Critical Harbors of Refuge – those harbors that offer safe haven to boaters that represent the sole site for protection based on a public safety based regional distance criteria. Authorization as a Harbor of Refuge does not automatically make a harbor critical.

f. Caretaker Activities – There are inland navigation systems and projects that will not be funded. Some minimal level of funding will be required to place these projects in a caretaker mode. We should address concern for the public's health and safety, environmental impacts resulting from full cessation of operations and how best to address them, review legal requirements placed on that project and ensure that litigation issues

are addressed in a caretaker plan, review any unintended consequences on other waterways, and establish a communication plan to include messages, FAQ, roll out strategy, web site information, and draft media release. Caretaker status is an extremely low level of funding for minimal effort.

IV-13. Low-Use Navigation Projects.

a. The performance indicators include three indicators that flag work on low-use navigation features. These are: (1) Waterway project has less than 1 billion system ton-miles of commercial cargo annually; (2) activity is for a waterway segment, upstream of which less than 1 million tons of cargo move annually; and (3) harbor projects have less than 1 million tons of commercial cargo annually. Activities meeting both criteria (1) and (2) will be included as a low-use waterway segment. Activities meeting criterion (3) will be included as a low-use harbor channel. For this sub-program, use the additional performance criteria provided in Table IV-4 for assisting in the evaluation of activities and projects.

TABLE IV-13
Shallow-Draft Harbor/Low-Use Segment Screens and Indicators

	SCREE N	SCREE N	Indicator s	Indicators	Indicato rs	Indicators	Indicator s
	Minimu m						
Low- Use Nav channels	<1 million tons	5-Year Avg cost per ton	Supports Public Transport ation	Boater Safety	BCR	Results of investment	Commerc ial fishery outputs
Low- Use Waterwa y segment s	< 1 million tons on systems with < 1 billion system ton- miles	5-Year Avg cost per ton	Multipurp ose Values	Public Health and Safety	Caretaker	Investment Issues	

Low-Use Harbor Channels Minimum:

Supports public transportation (ferries, tour boats);
Ensures boater safety (inlet dredging to reduce breaking wave hazards);
Project costs yield outputs / benefits exceeding costs;
Purpose should reflect results of investment (so what).
Supports some commercial fishery output;

Low-Use Waterway Segments Minimum:

Compute BCR based on transportation savings (average tons per year table);
Supports other business line purposes (flood damage reduction, recreation, environmental, water supply, etc.);
Port investment status (recent or planned port expansion/investments);
Commercial tonnage trends upward;
Ensures basic public health and safety;
Caretaker costs for non-budgeted segments.

b. **Navigation System Funding Needs.** See the discussion for O&M Systems in Annex C (O&M). Operation and Maintenance projects including Navigation projects will be combined in systems. For example, the South Oregon Coast Ports will be combined as appropriate in one or more of the O&M Systems. The linkage of individual projects in a systems evaluation must be done in a rational way. This is not a gambit to get additional funds for projects that do not merit it.

IV-14. Joint Costs. See Annex C, Paragraph C-2.3.b. for Joint Activities - Joint Costs. All Joint costs will be budgeted under the Hydropower Business Line.

IV-15. Watershed Studies. Watershed studies are multi-objective/multipurpose and encompass a relatively large geographic area. As a minimum, the study area must encompass the region of an 8 digit HUC. Following the reconnaissance study, a study may proceed as a watershed assessment using 75-25 cost-sharing (leading to a watershed management plan) in accordance with Sec. 729 or as a feasibility study accomplished in a watershed context in accordance with the standard feasibility study process and 50-50 cost-sharing when implementation of a Corps project is anticipated.

The key attributes of a watershed assessment, leading to a watershed management plan are as follows.

a. The study results in the identification of a combination of recommended actions (a Watershed Management Plan) to be undertaken by various partners and stakeholders in order to achieve local, tribal, regional, and national water resources

management goals identified in the study and may or may not identify further budgetable Corps studies or implementation projects. The plans will be multi-objective and multi-purpose.

b. Team thinking about water resources development and management in the context of multiple purposes rather than single purposes is required. This facilitates the search for comprehensive and integrated solutions to a variety of issues.

c. The study provides a means for improving opportunities for public and private groups to identify and achieve common goals by unifying on-going and future efforts.

d. Leveraging resources, including cost shared collaboration, and integrating programs and activities within and among Civil Works programs, and with other Federal, tribal state and non-governmental organizations, are critical factors.

IV-16. Navigation Criteria Matrix. ADDRESS THE RISK MATRIX RESULT Below are the data elements and definitions for the embedded Navigation Criteria Matrix (Excel worksheet). These definitions for individual data elements are also in the “Definitions” tab of the embedded worksheet.

a. Note that dollars amounts should be in thousands (\$000), **EXCEPT** columns **27, BUD REQ - FED** and **30, BUD REQ - IWTF**. Waterborne Commerce data should also be in thousands, but this data are already rounded to thousands in OMBIL and Waterborne Commerce data sources.

b. Unique Entries. Fields marked with an * are expected to be different for each increment amount. It would be expected that additional funds would show improvement in appropriate performance indicators. Other items would be the same for the same CWIS numbers *and hopefully will populate automatically*.

c. Criteria Matrix Data Elements and Definitions.

Col #. Column Title: Definition.

- (1) **BUSINESS LINE:** Common data field for P2 OFA.
- (2) **EROC:** Common data field for P2 OFA.
- (3) **MSC:** Common data field for P2 OFA.

- (4) **DIS:** Common data field for P2 OFA..
- (5) **AP ABBREV:** Common data field for P2 OFA.
- (6) **CW TYPE OF FUNDING:** Common data field for P2 OFA.
- (7) **PROGRAM CODE:** Common data field for P2 OFA. Refer to Definition/Glossary section.
- (8) **P2 PROJECT NUMBER:** Common data field for P2 OFA.
- (9) **BUDGET ITEM ID*:** Common data field for P2 OFA.
- (10) **FUNDING INCREMENT*:** Common data field for P2 OFA.
- (11) **DIS RANK*:** Common data field for P2 OFA.
- (12) **MSC RANK*:** Common data field for P2 OFA..
- (13) **HQ RANK*:** Common data field for P2 OFA. Will be completed by HQ.
- (14) **ARMY RANK*:** Common data field for P2 OFA. Will be completed by HQ.
- (15) **PRESIDENT'S BUDGET RANK:** Common data field for P2 OFA. Will be completed by HQ.
- (16) **PHASE*:** Common data field for P2 OFA. Refer to **Table 3** contained in the main EC.
- (17) **PHASE STATUS*:** Common data field for P2 OFA.
- (18) **PHASE COMPL*:** Required for all items in all accounts. The fiscal year the phase for which funds are being requested is scheduled to complete. The Reconnaissance phase ends with execution of a Feasibility Cost Sharing Agreement, or a report recommending no Federal action. For FY 2010 budget development, use the date of the Division Engineer's Transmittal of the report to HQ as the end of the Feasibility phase. The PED phase ends with completion of first set of plans and specifications and execution of the Project Cooperation Agreement/Project Partnership Agreement (PCA/PPA). Construction completion is defined as physical completion of the project and would not include follow-on post-construction monitoring. The date entered for each of multiple entries for a project/separable element should be determined based on the assumption that no subsequent work packages for the project/separable element will be

funded. For items in the O&M account, enter the PY unless the requested funds are scheduled to be carried over.

- (19) **PROGRAM NAME:** Common data field for P2 OFA.
- (20) **P2 PROJECT NAME:** Common data field for P2 OFA.
- (21) **SYSTEM CODE:** Common data field for P2 OFA.. See Annex C (O&M) for list of designated systems and codes.
- (22) **BASIN CODE:** Common data field for P2 OFA. Enter the 4 digit USGS HUC sub-basin code for the increment request - <http://water.usgs.gov/nawqa/sparrow/wrr97/geograp/geograp.html>.
- (23) **STATE:** Common data field for P2 OFA..
- (24) **CONTRACT TYPE:** Common data field for P2 OFA.
- (25) **CURRENT BUDGET – FEDERAL:** Common data field for P2 OFA.
- (26) **CURRENT BUDGET INF ADJ – FEDERAL:** Common data field for P2 OFA.
- (27) **FEDERAL (CORPS) BUDGET REQUEST*:** Common data field for P2 OFA.
- (28) **CURRENT BUDGET – IWTF:** IWTF amount.
- (29) **CURRENT BUDGET INF ADJ – IWTF:** IWTF amount inflation adjusted.
- (30) **BUD REQ - IWTF*:** The Inland Waterways Trust Fund amount requested for this increment; for C the sum of all Federal (Corps) and IWTF increments for this CWIS will be its capability. Each increment should provide measurable positive contributions to the applicable business line performance measures.
- (31) **AMOUNT NEXT CONTRACT*:** Required for all items in Construction. Provide the total amount of the next new contract. Enter the total value of the contract in thousands
- (32) **CONTINUING CONTRACT EARNING*:** Required for all continuing contracts, including both “true” and “special” continuing contracts. Provide the PY earnings for all continuing contracts continuing from the previous year. This number will

change as additional items are included in the budget request for an individual continuing contract. Enter NA if this line item is not a Continuing Contract.

(33) **CONTINUING CONTRACT VALUE:** Required for all continuing contracts including both “true” and “special” continuing contracts. Enter the total value of the contract in thousands. Enter NA if this line item is not a Continuing Contract.

(34) **CONTINUING CONTRACT AMOUNT APPLIED THROUGH PY-1:** Required for all continuing contracts including both “true” and “special” continuing contracts. Enter the amount in thousands. This should be zero for a continuing contract initiating in FY 2009. Enter NA if this line item is not a Continuing Contract.

(35) **LAST YEAR BUDGETED:** Enter the last fiscal year this study or project had funds included in the President’s Budget. Funds must have been in the final President’s Budget, not just the District’s request.

(36) **LAST AMOUNT BUDGETED:** Enter the amount included for this study or project in the President’s Budget indicated in “LAST YEAR BUDGETED” entry.

(37) **LAST YEAR APPROPRIATED:** Enter the last fiscal year this study or project was appropriated funds (conference report).

(38) **LAST AMOUNT APPROPRIATED:** Enter the appropriated amount (conference report amount) for this study or project contained in the appropriation indicated in “LAST YEAR FUNDS APPROPRIATED” entry.

(39) **TOT PROJ COST:** The total project cost includes the Federal and non-Federal costs of PED and Construction. This will be a rough estimate for a Reconnaissance New Start. During the Reconnaissance and Feasibility Phases use the estimate being developed for use in the appropriate report. Subsequently the figure will be derived from PRISM and is to include all Federal and non-Federal costs for PED and Construction. Be consistent with J-sheet.

(40) **BALANCE TO COMPLETE*:** The PY-1, uninflated balance to complete (in \$1,000s) for the study (if in reconnaissance or feasibility), construction project or separable element, Major Maintenance or Major Rehabilitation, diked disposal facility, sand mitigation, or beneficial use project. This should be consistent with items in construction or with the Total Project Cost. This number should vary with each work package in the budget for each specific project (the balance to complete will decrease with each successive work package).

- (41) **LAST YEAR CONSTRUCTION FUNDS WILL BE REQUESTED*:**
Last year funds (other than O&M) will be required. This includes authorized monitoring/adaptive management funded in the construction account.
- (42) **FCSA Date:** The actual or scheduled date of the FCSA. If increment request is to accelerate phase, this date should change from initial one.
- (43) **PED Date:** The actual or scheduled date of the PED Agreement. If increment request is to accelerate phase, this date should change from initial one.
- (44) **PCA/PPA Date:** The actual or scheduled date of the PCA/PPA. If increment request is to accelerate phase, this date should change from initial one.
- (45) **HW TYPE:** Navigation Activity, Harbor or Waterway Type. SD=Shallow-Draft Harbor; LSD=low use Shallow-Draft Harbor; DD=Deep-Draft Harbor; LDD=low use Deep-Draft Harbor; WW=Waterway; LWW=low use Waterway; PCS=Project Condition Surveys; SNW=Surveillance of Northern Boundary Waters; RAG=Removal of Aquatic Growth; RSM=Regional Sediment Management.
- (46) **HMTF (Y/N):** For all navigation projects, indicate if navigation costs for this project are eligible for reimbursement from the HMTF, Yes or No.
- (47) **HW TYPE USE CODE – CARETAKER (Y/N):** Use Code for Navigation Activity, Harbor or Waterway Type. Required for projects/items that are Low Use (LSD, LDD, LWW). Indicate Yes or No for Caretaker. A brief explanation should be provided in the Remarks Column.
- (48) **HW TYPE USE CODE – SUBSISTENCE HBR (Y/N):** Use Code for Navigation Activity, Harbor or Waterway Type. Required for projects/items that are Low Use (LSD, LDD, LWW). Indicate Yes or No for Subsistence Harbor. A brief explanation should be provided in the Remarks Column.
- (49) **HW TYPE USE CODE – CRITICAL HBR OF REFUGE:** Use Code for Navigation Activity, Harbor or Waterway Type. Required for projects/items that are Low Use (LSD, LDD, LWW). Indicate Yes or No for Critical Harbor of Refuge. A brief explanation should be provided in the Remarks Column.
- (50) **HW TYPE USE CODE – SAFETY (Y/N):** Use Code for Navigation Activity, Harbor or Waterway Type. Required for projects/items that are Low Use (LSD, LDD, LWW). Indicate Yes or No for Safety (Search & Rescue, USCG Station, etc.). A brief explanation should be provided in the Remarks Column.

(51) **HW TYPE USE CODE – NATIONAL SECURITY (Y/N):** Use Code for Navigation Activity, Harbor or Waterway Type. Required for projects/items that are Low Use (LSD, LDD, LWW). Indicate Yes or No for National Security.. A brief explanation should be provided in the Remarks Column.

(52) **HW TYPE USE CODE – PUBLIC TRANSPOR (Y/N):** Use Code for Navigation Activity, Harbor or Waterway Type. Required for projects/items that are Low Use (LSD, LDD, LWW). Indicate Yes or No for Ferry (Public) Transportation. A brief explanation should be provided in the Remarks Column.

(53) **DSAC CLASSIFICATION:** Each dam safety project, assurance study or group of similar studies for the same project should be identified with the appropriate phase code and the Dam Safety Action Classification code (DSAC = 1, 2, 3, 4, or 5)

(54) **DAM SAFETY IMPACTS:** For dam safety/seepage project - what other purposes (by Business Line) would be impacted if there was a failure. Maximum of 160 characters.

(55) **LEGAL MANDATE:** Special legal mandates – Y or N and then describe in remarks.

(56) **SAFETY ISSUES:** Safety issues – Y or N and then describe in remarks.

(57) **COMPONENT/ACTIVITY DESIGNATOR*:** Component/activity designator from FEM hierarchy (see the Navigation Appendix Para. IV-9).

(58) **CRITICAL/NON-CRITICAL*:** “C” for “Critical”/”NC” for “Non-Critical” (see the Navigation Appendix Para. IV-9).

(59) **COMPONENT/ACTIVITY RANK*:** Relative importance of the component or activity to the functioning of the project (see the Navigation Appendix Para. IV-9)

(60) **PROBABILITY CONDITION RATING*:** Risk assessment value (A, B, C, D, or F) of component, activity, or project as determined by the applicable Tables IV-5, IV-7, IV-9, or IV-11 (see the Navigation Appendix Para. IV-9)

(61) **CONSEQUENCE/ECONOMIC IMPACT*:** The consequence or economic impact value (1-5) of a component, activity, or project failing as determined by the applicable Tables IV-6, IV-8, IV-10, or IV-12. (see the Navigation Appendix Para. IV-9)

(62) **RELATIVE RISK RANKING*:** The Relative Risk assessments performed by the Districts for maintenance items (see the Navigation Appendix Para. IV-9), provide the input for Table IV-3. The resultant “Relative Risk Ranking” from Table IV-3 should be inserted in this column.

(63) **LATEST COM TON:** The commercial tons for the latest available year from OMBIL (Waterborne Commerce data).

(64) **5-YR AVG COM TON:** The last five-year average annual commercial tons from OMBIL (Waterborne Commerce data).

(65) **LATEST SYS TON MILES:** The system or trip ton-miles for the latest available year from OMBIL (Waterborne Commerce data).

(66) **5-YR AVG SYS TON MILES:** The last five-year average annual system or trip ton-miles from OMBIL (Waterborne Commerce data).

(67) **LATEST TON MILES:** The ton-miles for the latest available year from OMBIL (Waterborne Commerce data).

(68) **5-YR AVG TON MILES:** The last five-year average annual ton-miles from OMBIL (Waterborne Commerce data).

(69) **5-YR AVG \$/TON:** Five-year average total O&M costs divided by five-year average annual commercial tons for the same period from OMBIL for Waterborne Commerce and O&M financial data.

(70) **TOTAL VALUE OF FOREIGN CARGO:** Total dollar value of the foreign cargo for the project at current price levels. Available from Waterborne Commerce data.

(71) **VALUE OF EXPORT CARGO:** Dollar value of the export cargo for the project at current price levels. Available from Waterborne Commerce data.

(72) **% TIME AVAIL*:** Percentage of time project is available to perform as designed with limits from deferred maintenance, dam safety issues, etc. It would be expected that additional increment requests would show improvement in appropriate performance indicators. Explain in Remarks.

(73) **BCR:** The project's benefit cost ratio at 7% and current price levels.

(74) **RBRCR:** The project's remaining benefits - remaining costs ratio at 7% and current price levels. See Annex B for discussion.

(75) **BCR – Applicable:** The project's benefit cost ratio at the applicable interest rate.

(76) **RBRCR – Applicable:** The project's remaining benefits - remaining costs ratio at applicable rate.

(77) **APPLICABLE RATE:** The applicable interest rate - See main EC paragraph 10.

(78) **BCR – Current:** The project's benefit cost ratio at the current interest rate. See main EC paragraph 10.

(79) **RBRCR – Current:** The project's remaining benefits - remaining costs ratio at current rate. See main EC paragraph 10.

(80) **PROJECT DESCRIPTION:** Main features/Navigation segment, 50 words or less. Complete sentences are not required. Maximum of 250 characters.

(81) **BUDGET ITEM JUSTIFICATION*:** State proposed use of the increment amount (be as specific as possible) and what the increment amount accomplishes (what are we getting for this amount of \$). Key points to be able to distinguish from other increment or other projects. For dam safety items (inspections and studies), the "Purpose" field should include what is being studied, the expected report completion date, if not completing in the PY, the additional \$ needed to complete, and estimated cost (magnitude) of the construction cost. It would be expected that additional increment requests would show improvement in appropriate performance indicators. Maximum of 160 characters.

(82) **CONSEQUENCES*:** What is penalty (consequence) if not funded this PY - increment amount needed to comply with safety, settlements, loss of service, structural failure, etc. It would be expected that additional increment requests would show improvement in appropriate performance indicators. Maximum of 160 characters.

(83) **REMARKS*:** Additional critical information to support increment amount that is not in the other fields and what is called for from other fields. Use to explain District & Division ranks, lack of data in required fields, special legal or other requirements, safety issues, etc. Provide rationale to support funding of O&M Major Maintenance Items under C. Document infrastructure at significant risk to justify budget requests. It would be expected that additional increment requests would show improvement in appropriate performance indicators. For projects with an N/A in any

field, such as BCR and RBRCR, explain why they are not required Maximum of 600 characters.

(84) **REMARKS (CONTD)*:** Additional critical information to support increment amount that does not fit in REMARKS column (81).

(85) **OTHER PURPOSES:** The other outputs provided by the project.
N=Navigation; F=Flood Damage Reduction; H=Hydropower; E=Environmental;
R=Recreation; W=Water Supply.

(86) **FUNDING OF OTHER PURPOSES:** Displays the budget request amounts entered for other business lines for the project. System generated, no entry required.

(87) **EXTERNAL PEER REVIEW:** Enter the amount in thousands included in the Budget Request – Fed that is required to fund the Federal cost of external peer review in accordance to WRDA 2007, Section 2034.

(88) **WATERSHED STUDY:** Is this a watershed study or project? Y or N based on criteria in EC.

(89) **WATERSHED DOCUMENTATION:** If Column 88 is “Y”, then provide a narrative documentation of why the study is a Watershed Study (400 characters). The Phase Code in Column 16 should be “WA”.

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